

CLAIMS

What is claimed is:

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1. A method in a data processing system for executing instructions, the method comprising:

executing instructions in a processor in the data processing system;

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detecting indicators during execution of the instructions, wherein the indicators are data values in memory that specify counting of events that are associated with execution of the instructions or are data values in memory that specify counting of events that are associated with accesses to memory locations;

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counting events that occur within the data processing system as specified by the indicators;

retrieving a count value that represents counted events; and

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using the count value to represent a number of operations related to acquiring a semaphore.

2. The method of claim 1 further comprising:

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performing a computation in which the count value represents a number of attempts to acquire a semaphore, a number of successes in acquiring the semaphore, or a number of failures in acquiring the semaphore.

3. The method of claim 1 further comprising:

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adjusting operations on the semaphore based on the count value.

4. A method in a data processing system for executing instructions, the method comprising:

determining instructions for an operation on a semaphore; and

5 associating indicators with the instructions such that the indicators are to be processed during execution of the instructions, wherein the indicators are data values in memory that specify counting of events that are associated with execution of the instructions or are data
10 values in memory that specify counting of events that are associated with accesses to memory locations.

5. The method of claim 4 wherein the step of associating indicators further comprises:

15 associating an indicator with an instruction that attempts to acquire the semaphore, whereby a count value for the counting of events that are associated with execution of the instruction represents a number of attempts to acquire the semaphore.

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6. The method of claim 4 wherein the step of associating indicators further comprises:

associating an indicator with an instruction that is executed during a successful acquisition of the
25 semaphore, whereby a count value for the counting of events that are associated with execution of the instruction represents a number of successes in acquiring the semaphore.

7. The method of claim 4 wherein the step of associating indicators further comprises:

associating an indicator with an instruction that is executed during a failed acquisition of the semaphore,
5 whereby a count value for the counting of events that are associated with execution of the instruction represents a number of failures in acquiring the semaphore.

8. A computer program product on a computer readable medium for use in a data processing system that executes instructions, the computer program product comprising:

5 means for executing instructions in a processor in the data processing system;

means for detecting indicators during execution of the instructions, wherein the indicators are data values in memory that specify counting of events that are
10 associated with execution of the instructions or are data values in memory that specify counting of events that are associated with accesses to memory locations;

means for counting events that occur within the data processing system as specified by the indicators;

15 means for retrieving a count value that represents counted events; and

means for using the count value to represent a number of operations related to acquiring a semaphore.

20 9. The computer program product of claim 8 further comprising:

means for performing a computation in which the count value represents a number of attempts to acquire a semaphore, a number of successes in acquiring the
25 semaphore, or a number of failures in acquiring the semaphore.

10. The computer program product of claim 8 further comprising:

30 means for adjusting operations on the semaphore based on the count value.

11. A computer program product on a computer readable medium for use in a data processing system that executes instructions, the computer program product comprising:

5 means for determining instructions for an operation on a semaphore; and

means for associating indicators with the instructions such that the indicators are to be processed during execution of the instructions, wherein the indicators are data values in memory that specify
10 counting of events that are associated with execution of the instructions or are data values in memory that specify counting of events that are associated with accesses to memory locations.

15 12. The computer program product of claim 11 wherein the means for associating indicators further comprises:

means for associating an indicator with an instruction that attempts to acquire the semaphore, whereby a count value for the counting of events that are
20 associated with execution of the instruction represents a number of attempts to acquire the semaphore.

13. The computer program product of claim 11 wherein the means for associating indicators further comprises:

25 means for associating an indicator with an instruction that is executed during a successful acquisition of the semaphore, whereby a count value for the counting of events that are associated with execution of the instruction represents a number of successes in
30 acquiring the semaphore.

14. The computer program product of claim 11 wherein the means for associating indicators further comprises:

5 means for associating an indicator with an instruction that is executed during a failed acquisition of the semaphore, whereby a count value for the counting of events that are associated with execution of the instruction represents a number of failures in acquiring the semaphore.

15. An apparatus in a data processing system that executes instructions, the apparatus comprising:

means for executing instructions in a processor in the data processing system;

5 means for detecting indicators during execution of the instructions, wherein the indicators are data values in memory that specify counting of events that are associated with execution of the instructions or are data values in memory that specify counting of events that are
10 associated with accesses to memory locations;

means for counting events that occur within the data processing system as specified by the indicators;

means for retrieving a count value that represents counted events; and

15 means for using the count value to represent a number of operations related to acquiring a semaphore.

16. The apparatus of claim 15 further comprising:

means for performing a computation in which the
20 count value represents a number of attempts to acquire a semaphore, a number of successes in acquiring the semaphore, or a number of failures in acquiring the semaphore.

25 17. The apparatus of claim 15 further comprising:

means for adjusting operations on the semaphore based on the count value.

18. An apparatus in a data processing system that executes instructions, the apparatus comprising:

means for determining instructions for an operation on a semaphore; and

5 means for associating indicators with the instructions such that the indicators are to be processed during execution of the instructions, wherein the indicators are data values in memory that specify counting of events that are associated with execution of
10 the instructions or are data values in memory that specify counting of events that are associated with accesses to memory locations.

19. The apparatus of claim 18 wherein the means for
15 associating indicators further comprises:

means for associating an indicator with an instruction that attempts to acquire the semaphore, whereby a count value for the counting of events that are associated with execution of the instruction represents a
20 number of attempts to acquire the semaphore.

20. The apparatus of claim 18 wherein the means for associating indicators further comprises:

means for associating an indicator with an
25 instruction that is executed during a successful acquisition of the semaphore, whereby a count value for the counting of events that are associated with execution of the instruction represents a number of successes in acquiring the semaphore.

21. The apparatus of claim 18 wherein the means for associating indicators further comprises:

means for associating an indicator with an instruction that is executed during a failed acquisition
5 of the semaphore, whereby a count value for the counting of events that are associated with execution of the instruction represents a number of failures in acquiring the semaphore.